

## A Comparative Study of Maternity Care Service Models among Selected Developed Countries and Iran

Mojgan Neinavaei<sup>1</sup>, Seyed Jamaledin Tabibi<sup>1</sup>, Poursan Raeissi<sup>2</sup>, Amir Ashkan Nasiripour<sup>1\*</sup>

<sup>1</sup>Department of Health Care Management, Science and Research Branch, Islamic Azad University, Tehran, Iran; <sup>2</sup>Department of Health Services Research, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran

\*E-mail: [nasiripour@srbiau.ac.ir](mailto:nasiripour@srbiau.ac.ir)

### Abstract

Over half a million women die each year during pregnancy, delivery or shortly thereafter. Improving the health of mothers and providing quality for reproductive health services are pivotal to addressing many underlying causes of child mortality. The aim of this study was to understand some gaps in Iran maternity service and suggest ways to resolve them. This was a descriptive - comparative and applied research about maternity care service models in Iran and three selected developed countries. The following issues are considered in current study: maternal services package, maternity care models (staffs and location of service delivery). These selected developed countries in current study were Australia, England and Japan. In all developed countries maternity service models are various and maternity service insurance is complete. They have home care and home delivery and comprehensive package for all maternity needs in prenatal, delivery and post-partum either somatic or emotional needs. According to these results, it was concluded that models of maternity services in Iran were different from developed countries. Iran for reaching to best maternity care goals should develop maternity service models and in this way, it should support midwives practice and insurance coverage of all maternity care and develop maternity services models proportional with cultural background. Finally, partner participation seems necessary in Iran.

**Keywords:** Maternity care services, models, developed countries, Iran

### Introduction

Over half a million women die each year during pregnancy, delivery or shortly thereafter; the Millennium Development Goals (MDGs) call for reducing maternal mortality by 75% by 2015 (Houweling, Ronsmans, Campbell & Kunst, 2007). A child is about 500 times more likely to die in the first day of life than at one month of age. A common factor in these deaths is the health of the mother. Improving the health and nutrition of mothers-to-be and providing quality for reproductive health services are pivotal to addressing many underlying causes of child mortality (World Health Organization). MCH (maternal child health) outcomes are related to health care service delivery (including prenatal, perinatal and postnatal services), socioeconomic, environmental and cultural factors. Furthermore, it is well acknowledged that every pregnant woman and newborn is at risk and that quality for obstetric care, safe delivery and access to essential obstetric services are necessary (Stanton & Mwanri, 2013). Maternal mortality is the main factor that substantially lowers the life expectancy of women and it is a basic human right that pregnancy to be made safe for all women (Moosavisadat, Lamyian, Parsap & Hajizadeh, 2011). Improving the quality at maternity care services is an effective strategy to reduce maternal mortality (Moosavisadat, Lamyian, Parsap & Hajizadeh, 2011). The World Health Organization (WHO) emphasizes the importance of evaluating the structure, process and outcome of health services to improve the quality of care (Moosavisadat, Lamyian, Parsap & Hajizadeh, 2011).

Structure refers to the overall ability of a midwifery service to provide care and includes such elements as office space, equipment, staff and documentation. Process refers to the way in which care is provided. The place of birth should provide a distraction-free, comfortable, supportive, and reassuring environment for mothers and their families (Research Group, Japan International Cooperation Agency (JICA), 2005). Women need confidence and freedom to respond to their contractions in any way that works for them, and have continuous emotional and physical support throughout labor (Torkzahrani, 2008). Maternal and child health is a field of care that is experiencing great challenges (Research Group, Japan International Cooperation Agency (JICA), 2005). Around one million women give birth annually in Iran, with 90% receiving maternity care in hospital (Torkzahrani, 2008). In 1990 Iran had MMR about 83 and IMR about 44 while in 2013 reached to 23(per 100000 live births) and 14(per 1000 live births) ( World Health Organization). But mortality is still high compared with rates in developed countries. Compared with Iran, maternal and infant mortality rates are a quarter or less in developed countries (World Health Organization). Despite many advances in the Iranian health care system over recent decades, these statistics show that there are still many rooms for improvement in the quality of maternity care (Aghlmand, Akbari, Lameei, Mohammad, Small & Arab M.BMC, 2008). In this article we compared maternity care service models in selected developed countries with Iran for determine some gaps and ways are suggested for resolving them.

### Methods

This is a descriptive - comparative and applied research about maternity care service models in Iran and three selected developed countries. In current study we considered the following issues: maternal services package, maternity care models (staffs and location of service delivery). WHO websites were used to select developed countries in maternity care and upon related indicators and high ranking in the world in this field, Australia, England and Japan were selected. The best indices for quality of maternity care are IMR (Infant Mortality Rate) and MMR (Maternal Mortality Rate). Other indices are skilled attendants at birth (The proportion of deliveries attended by skilled health personnel), unmet need for family planning, Contraceptive prevalence (%) and Antenatal care coverage (at least four visits (%)) (World Health Organization).

MMR respectively in Japan, Australia and England (2013) was 6, 6 and 8 while in Iran was 23. IMR respectively in Japan, Australia and England (2013) was 2, 3 and 4 while in Iran was 14. According to WHO report (2012), the world rank for female life expectancy in these countries respectively in Japan, Australia, and England was 2, 6 and 33 while in Iran was 115 (World Health Organization). In addition, Japan is an Asian country and is more likely to Iran and two other countries are Representative of the Europe and the Pacific's countries. The stages of study were: a) selecting paradigms, b) selecting criteria for comparing paradigms, c) collecting valid information, d) designing comparative matrix and e) comparing and analyzing. Initially, websites of WHO, Ministry of health in related countries, world bank and scientific journals (2011-2013) and collected up-to-date information from formal, valid documents were used in this study. Terms combined in the search included: maternal /maternity models, maternal/maternity care, maternal/maternity services, maternal/maternity health, prenatal care, antenatal care, interpartum care /postnatal care, delivery, midwifery and obstetric. Then comparative table was made for related variables and this information was compared with Iran and accordingly similarities and differences were identified and finally, the strategies for improving the present situation about maternity services in Iran were discussed to achieve the goals of maternal health.

## Results

### *a) Maternal package*

#### *Japan*

In Japan, those who are diagnosed to be pregnant immediately report their pregnancy to the mayor of the municipality. The municipalities provide pregnant/ postpartum women with the necessary health guidance on pregnancy, child delivery, and childrearing or recommend them to receive such health guidance. Upon the birth of a baby weighing under 2,500 g, his/ her guardians immediately report to the municipality where the baby is located at the time.

The municipality provides premature infants with the medical aids, or pays the full medical expenses and provides health check-ups for 18-month-old infants and 3-year-old infants.

Additionally, the Municipality provides health check-ups for pregnant/ postpartum women and newborns/ infants as needed, or encourages them to receive health check-ups (Department of Health Promotion Policy, 2014). With the aim of achieving consistent health outcomes throughout pregnancy and infancy, all pregnant women are registered, and are issued a “Maternal and Child Health Handbook.” Details of the pregnancy, birth and child development are recorded in it, which also provides useful information for pregnant women and new mothers of an administrative nature as well as public health and child raising tips (Department of Health Promotion Policy, 2014, Japan Ministry of Health, Labour and Welfare (MHLW), 2014).

In addition to Prenatal/ postnatal health check-ups (Ultrasound Scan for mothers over 35-year old), Health check-up for infants is done too., Distribution of the Maternity Logo for maternal security in public places, Home-visit guidance, by public health nurses, etc. Home visit services for all families with infants before 2 months of age (“Hello Baby Project”), Consultation and guidance services for maternal and child health (premarital classes) (classes for newlyweds) (parents’ class) (child care class) and psychological support are other acts in japan's maternity services (Department of Health Promotion Policy, 2014, The Japan Ministry of Health, Labour and Welfare, 2014).

#### *Australia*

Like other areas of health care, maternity services in Australia are services that represent a mix of common wealth, state and territory and private funding and delivery. The common wealth funds of maternity services through four major channels: The MBS and PBS. state governments, through the national health care agreement for public hospitals; Private Health Insurance (PHI) through the 30 percent rebate; and through a range of specific targeted programs (Australia health government, Australian Health Ministers’ Conference, 2011). Consulting, exercises, screening for mothers and babies (tests and ultrasounds), prenatal classes are available for them. Routine antenatal care focuses on the following areas:

a) Maintaining and improving health and general wellbeing, emphasizing the importance of a healthy diet, exercise and avoiding smoking, alcohol and illicit drugs are important for the pregnancy, mother and unborn child – as well as establishing patterns of healthy living for the entire family.

b) Continuing to screen for managing pregnancy complications through vigilant history, clinical examination and appropriate investigations through the pregnancy according to college guidelines.

c) Management of any pregnancy complications as they arise (The Royal Australian and New Zealand College of obstetricians and gynecologists, 2014).

The Australian Immunization Handbook, while making recommendations on vaccination rather than screening considers the routine antenatal screening for hepatitis B (The Australian Health Ministers’ Conference, 2011).

*England*

A planned schedule of antenatal visits should also be agreed at the first antenatal visit based on the woman's individual needs. Assessment of a woman's risk and needs for additional care continues throughout pregnancy. The maternity services package is consist of consulting about nutrition, exercises, screening for mothers and babies (tests and ultrasounds), prenatal classes (parental craft) and preparing them for child birth with partner's presence and memorialized classes for multiparous women. There's a psychological support for mothers too (National Collaborating Centre for Women's and Children's Health, 2003).

Services include child and family health, education and support for parents of children with special needs. Women should receive coordinated postnatal care, delivering according to relevant guidelines and an agreed pathway of care, encompassing both medical and social needs of women and their babies including those requiring perinatal mental health services or neonatal intensive care. Midwives and health visitors are ideally responsible to identify children and families who require additional support. Parenting support programs through focused home visiting can radically improve outcomes for the mother, child and family (Department of Health/Partnerships for Children, Families and Maternity, 2007). Maternity care is provided by NHS trusts and NHS foundation trusts (Comptroller and Auditor General, 2013).

*Iran*

Prenatal package consists of: vaccination, free prescribing of supplementary, educational classes (about diet, pregnancy problems, breastfeeding, and screening) without partner presence, fetal and maternal screening (tests and ultrasounds) but there is no provision and prediction for doing suitable exercises in pregnancy. Despite every woman's access to perinatal care in Iran, almost no type of childbirth education program exists in Iran's perinatal-care system. Iranian pregnant women receive brief information about pregnancy during their 5- to 10-minute routine prenatal visits or in the hospital, and they may receive an additional two or three 15- to 20-minute sessions of extra "classes". Prenatal care handbook for record of cares exists but is not unique in all maternity services and has incomplete educational role. Some of prenatal routine tests, vaccination and educational classes in pregnancy are free and cover by basic insurance but in other items women should pay on their own expense or with supplementary insurance. Vaginal delivery is free in public hospitals since 2014 for encourage women to normal birth (Iran Ministry of Health and Medical Education).

***b) Maternity care services models (care models, maternity care staff and place of providing care)***

*Japan*

When a woman becomes pregnant refers to obstetrics outpatient services for health checkup by a physician and health guidance by a midwife. Then upon risk assessment and needs identification of the pregnant woman and the family, checkups begin at various stages.

a) Obstetrics outpatient services (health checkup by a physician and health guidance by a midwife)

b) In-hospital midwifery clinic (health checkup and health guidance by a midwife).

These preferences depends on decrease or increase of patients risks. In each facility, midwives, physicians, and the relevant staff are prepared for in-hospital midwifery clinic and for in-hospital midwifery care in cooperation, so that they can be operated based on the community needs and the roles of the facility. Midwives are providing proactive care mainly to low risk pregnant/parturient women. Regarding high risk pregnant/parturient women, they are provided midwifery care in cooperation with physicians depending on their conditions.

In time of labor, there are two options for care: a) Physician- led birth assistance (in high risk situations which care provided by a midwife), b) Midwife-led birth assistance (in low risk situations which in-hospital midwifery care is done).

There are about 200 to 300 midwives who visit at home throughout Japan. Some maternity clinics offer home births for only low risk women.

Post-partum care is provided (health checkup and guidance of mothers and children) in a postpartum midwifery care and is reported to the physician for diagnosis and treatment. Midwifery outpatient service (all measures are done by a midwife) in cooperation with obstetrics and pediatrics outpatient services. Childbearing assistance is done by telephone counseling and home visits (Hello baby projects) (Department of Health Promotion Policy, 2014, Japan Ministry of Health, Labour and Welfare, 2014).

#### *Australia*

Prenatal care may be provided by midwives, registered medical practitioners (general practitioners with credentials in obstetrics) or registered medical specialists with credentials in obstetrics who provide maternity care within their scope of practice (Queensland Health, 2012).

Maternity care in Australia has six different levels which upon mother risks and needs, care providers and equipment are vary (Queensland Health, 2012). Models of maternity care in antenatal, prenatal and postpartum are vary from public maternity, hospital or hospital midwives clinic, birth center care, shared maternity care, combined maternity care, team midwifery care, case load midwifery care, GP/midwife public care, outreach midwifery care and planned home births (Australian Government Department of Health and Ageing, 2009). Regardless of the model of care, all cares are collaborative –cooperative and women-centered. Women may receive care within the home, a community setting or a hospital, which may be categorized as low, moderate and high risk (Queensland Health, 2012). In Australia planned home births means that pregnancy checkups, intrapartum and postnatal care provided by the same midwife transfer to hospital in the case of complications and receive a number of visits with a medical practitioner (Australian Government Department of Health and Ageing, 2009). However, the model chosen by women is often a function of income, locality and/or private health insurance status rather than clinical need. A system of clear referral guidelines and pathways are established so that pregnant women who require additional care are cared for and treated by the appropriate specialist teams, including anesthetic assessment when problems are identified.

All women should be assessed immediately after giving birth by a suitably qualified member of the birth team (doctor or a midwife) and again prior to transfer to community care and/or within 24 hours of giving birth, by a midwife (The Australian Health Ministers' Conference, 2011).

#### *England*

In England, when a woman learns that is pregnant, she and her partner refer to a midwife or general practitioner at 6-8 week of pregnancy. Midwife- and GP-led models of care should be offered to women with an uncomplicated pregnancy. Routine involvement of obstetricians in the care of women with an uncomplicated pregnancy at scheduled times does not happen (Department of Health/Partnerships for Children, Families and Maternity, 2007). Then antenatal care begins upon standardized risk and needs assessment by midwifery care or maternity care (National institute e for health and clinical excellence, 2008). Referral mechanisms will be in place to ensure the successful and safe movement and/or to transfer of women between local, secondary and tertiary services. Appropriate communication systems will be put in place to ensure the woman's care remains midwife coordinate, regardless of complexity. Wherever possible the midwife should always be transferred with the woman. Clear referral system and categorized levels of care are existed for maternity services (National Collaborating Centre for Women's and Children's Health, 2003). In



time of birth, she is transferred to other setting which is arranged through local network. Women will be able to choose any other available midwifery unit in England. The options for place of birth are: birth supported by a midwife at home (a small proportion of women chooses to deliver their babies at home and will be supported by community midwives), birth supported by a midwife in a local midwifery facility such as a designated local midwifery unit or birth center. The unit might be based on the community, or in a hospital; patterns of care vary across the country to reflect different local needs. These units promote a philosophy of normal and natural labor and childbirth. The other option is birth supported by a maternity team in a hospital. The team may include midwives, obstetricians, pediatricians and anesthetists. After going home, women and their partners will have a choice of how and where to access postnatal care. This will be provided either at home or in a community setting, such as a Sure Start Children's Centre (These are situated in easily accessible areas, often a pram's push away from home and bring together a range of integrated services for children and their families through pregnancy and then birth to five years of age) (Department of Health/Partnerships for Children, Families and Maternity, 2007, United kingdom government, department of health).

#### *Iran*

Typically, Iranian pregnant women receive their care from physicians or midwives during pregnancy, birth and puerperium. It is well accepted that there are two different views of pregnancy and birth: The midwifery model which views pregnancy and birth as a natural processes, and the medical model which views pregnancy as high-risk and birth as inherently dangerous, requiring technological interventions (Torkzahrani, Journal of Perinatal Education, Commentary, 2008). Iranian midwives work in hospitals under the supervision of obstetricians and, in their practice, serve as assistants to the obstetricians. The accepted assumption that physicians should control the care of childbearing women is a significant factor in undermining midwifery and normal birth. One of the world's leading experts on childbirth education, Andrea Robertson wrote about birth in Iran in her diary. She concluded that physicians are all-powerful and completely dictating the management of every birth and seemingly oblivious to evidence of care, midwifery skills, the mother's wishes, or anything else that might impact their practice (Torkzahrani, 2008). Maternity services in Iran have three levels (Group of Authors, Country Guide obstetric services, 2013). : a) First level: healthy mothers who are safe and without risk during pregnancy that are expected to bring a baby with no risks require this level of service. Hospitals in this level, requires only the facilities necessary to carry out a simple NVD (Normal vaginal delivery).

b) Second level: this level is necessary for mothers who are sick or have pregnancy risks or for a baby who requires not very advanced medical attentions. In this level of care clinical facilities such as radiology and laboratory etc. are provided as a moderate.

c) Third level: mothers or babies who are very ill and have high-risk pregnancies and require advanced care should use this level. In Iran, more than 95% of births take place in the hospital (Torkzahrani, 2008). Also, due to Iranian religious and cultural values which view birth as "women's events" men do not attend in the labor and birth as a father or a doctor, except under certain conditions. Usually, mothers come alone in the labor ward and stay with several other mothers in the same room during the labor. Midwives or other health-care providers are the women's only source of support in labor and birth (Torkzahrani, 2008). There are no birth centers in Iran, and home birth has been forgotten during the last 25 years, except in faraway regions. Due to the lack of a referral system, home birth is currently illegal in Iran and home care does not exist. Post-partum care is done in private or public hospitals /clinics by midwives or physicians (Torkzahrani, 2008).

## Discussion

In this study, maternity services in selected countries were revised. One important thing which is highlighted in these countries is variety of maternity care settings which enable women and their partners to select one of their available and acceptable services. This selection depends on their risk assessment by physician, culture, beliefs and preferences. For example, maternity care is done in hospital, clinic, maternity home, etc. but in Iran despite of good existence of maternity units, variety of care settings is low. Iran has a very variant level of culture, beliefs and educational families and most of them prefer to deliver in places and circumstances which is nearer to their homes. But home cares or planned home birth are not exist in Iranian health system planning, especially in rural places which are far from capitals. Home birth in these women is often done by not expert and educated persons and in unsanitary conditions. Home care is important too, because provides access and continuous care for mothers and infants and is an opportunity for health staff to know different needs of mothers and infants in different families and develop maternity care.

These results are consistent with the study of Zarei (2011) on development of home care services (Zareie, 2005), and birthplace in England Collaborative Group (2011) on perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies (Birthplace in England Collaborative Group, BMJ., 2011) but in conflict with the study of Mirmolaei (2010) on effect of home postpartum care on quality of life of low risk mothers (24).

In this study, health staffs that provide maternity services are very much in developed countries and consist of general practitioner, with credentials in obstetrics, midwives and obstetricians, but in Iran we have too much educated midwives which can enter the system and provide maternity care in different places such as homes but not use them correctly. In Japan such as Iran these cares are provided from midwives and obstetrician but midwives in Japan pass graduate courses for example in ultrasound, consultation etc and have permission for total care and delivery in low risk women. In Iran looking to delivery is from medical view not physiologic event and all deliveries and cares are done by physician idea. Health insurance doesn't cover midwifery services so they practically have less effect. These results are agrees with Torkzahrani study (2008) on Childbirth Education in Iran (Torkzahrani, 2008).

In this study, Iran's Maternity services package is good. Free education and consulting classes for antenatal, prenatal and postnatal are advantages of maternal and infant health services, but it is limited to some public and private clinics and hospitals and only for mothers. While partner participation in these classes and in time of labor can be very effective in promote maternal and infant healths. These results are agrees with Redshaw (2013) on Fathers' engagement in pregnancy and childbirth: evidence from a national survey (Mirmolaei, Amelvalizadeh, Mahmoudi & Tavakol, 2011).

Maternity classes in these developed countries provide all needs for women and partners but in Iran these classes have very limited time and are free only in public hospital and clinics. These classes do not pay attention to the appropriate exercise and parents do not participate in it, while partner presence has a great role in maternal health. Classes for delivery preparation are very limited but in these developed countries this subject is important.

In these developed countries partner attends in delivery room but in Iran women are deprivation from this great emotional support. Also, in these countries in prenatal and postnatal classes psychological support is provided while in Iran this important maternity support is very limited.

Prenatal checkups and screening tests are available in Iran, but regardless of routine pregnancy tests, other screening tests for mothers and fetus are not free and many supplementary uninsured women are deprived from it. Maternity logo in Japan is a good idea characterizes pregnant

women in society and can be used by other countries but in Iran and two others countries do not exist. There is maternal handbook for family education and records of infant and mother's checkups in most developed countries. In England and Australia this hand book exist for prenatal care records and vaccination and in Japan this handbook has financial support too. In Iran this hand book is also exist but practically its use is limited. In health checkup, records of cares and educations are not coordinated system.

In this study referral system in developed countries and Iran is provided but in Iran third degrees hospitals are not exist in all of the areas and access to them is limited especially in rural areas.

In these developed countries basal insurance is comprehensive and in Japan, government cover total expenditure for LBW, prematurity and pregnancy complication but in Iran this support is limited.

### Conclusion

According to these results it can be concluded that models of maternity services in Iran were different from developed countries. Iran should develop maternity service models for reaching to best maternity care goals and in this way can create home care and even home delivery in health system structure. This country has many graduated midwives which can use them in all of country. Supporting this important human health recourse with midwifery service insurance coverage and trusting to their abilities will propel the maternity service from medical to physiologic event and with lowest intervention. Classes for prenatal, delivery and post-partum should be more comprehensive and with partner attendance. Attention to psychological problems in these times need to more support. Unique maternal handbook for care and education should exist in private and public centers and finally, complete insurance coverage and government support in maternity and infant cares should be considered.

### References

- Aghlmand, S., Akbari Lameei, A., Mohammad, K., Small, R., & Arab, M. BMC (2008). Pregnancy and Childbirth, Developing evidence-based maternity care in Iran: a quality Improvement Study, 2(20),1-8.
- Australia health government, Available on URL <http://www.health.gov.au/internet/main/publishing.nsf/Content/about+us-1>.
- Birthplace in England Collaborative Group. BMJ. (2011). Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: The Birthplace in England national prospective cohort study, 343:d 7400:1-13.
- Comptroller and Auditor General, (2013). Department of Health, Maternity services in England, London: The Stationery Office.
- Department of Health Promotion Policy, (2014). Midwifery in Japan. Tokyo: Japanese Nursing Association, Available on the JICA web page. URL: <http://www.nurse.or.jp/jna/english/>
- Department of Health/Partnerships for Children, Families and Maternity, ( 2007). Maternity Matters: Choice, access and continuity of care in a safe service. London: DH publication.
- Houweling, TA., Ronsmans, C., Campbell, OM., & Kunst, AE. (2007). Bulletin of world health organization, Huge poor-rich inequalities in maternity care: an international comparative study of maternity and child care in developing countries, 85(10),745-754.
- Iran Ministry of Health and Medical Education (MOHME), Available on URL: <http://www.behdasht.gov.ir/>



- Mirmolaei ST , Amelvalizadeh M , Mahmoudi, M. & Tavakol Z. (2011). Effect of Home Postpartum Care on Quality of Life of Low Risk Mothers, *Journal of Faculty of Nursing and Midwifery, Tehran University of Medical Sciences*, 17(2), 42-51.
- Moosavisadat, SM., Lamyian, M., Parsap, S., & Hajizadeh, E. (2011). Comparison of maternity care quality in teaching and non-teaching hospitals in Khorram Abad, *East Mediterr Health Journal*, 17(8), 45-638.
- National Collaborating Centre for Women's and Children's Health, (2003). Antenatal care: routine care for the healthy pregnant woman .London: The RCOG Press Available on URL: [http://www.whizproducts.co.uk/en/pdf/082\\_Whiz\\_CC\\_MSU\\_Exhibit\\_17\\_CG6.pdf](http://www.whizproducts.co.uk/en/pdf/082_Whiz_CC_MSU_Exhibit_17_CG6.pdf).
- National institute for health and clinical excellence, (2008). Information about nice clinical guideline 62, understanding nice guidance. Available on URL: <http://www.nice.org.uk/guidance>
- Queensland Health, (2012). Clinical Services Capability Framework for Public and Licensed Private Health Facilities v3.1. Brisbane: Queensland Government Department of Health.
- Redshaw M & Henderson J. BMC. (2013). Pregnancy and Childbirth. Fathers' engagement in pregnancy and childbirth: Evidence from a national survey, 13,70.
- Research Group, Japan International Cooperation Agency (JICA), ( 2005). Japan's experience in public health and medical systems towards improving public health and medical systems in developing countries, *Maternal and Child Health.*; available on the JICA web page. URL: <http://www.jica.go.jp/>.
- Stanton, K., & Mwanri, L. (2013). Global Maternal and Child Health Outcomes: The Role of Obstetric Ultrasound in Low Resource Settings, *Journal of Preventive Medicine*, 1(3), 22-29.
- The Australian Government Department of Health and Ageing, (2009). Led by the common wealth chief nurse and midwifery officer, Rosemary Bryant, *Improving Maternity Services in Australia Report of the Maternity Services Review*.
- The Australian Health Ministers' Conference (2011). National Maternity Services Plan, Canberra, Available on URL: [http:// www.ahmac.gov.au](http://www.ahmac.gov.au).
- The Japan Ministry of Health, Labor and Welfare (MHLW) (2014). Available on URL: <http://www.mhlw.go.jp/english/index.html>.
- The Royal Australian and New Zealand College of obstetricians and gynecologists, (2014). Standards of maternity care in Australia and New Zealand, Melbourne, Victoria: Ranzcog Publications, available on the RANZCOG website at: <http://www.ranzcog.edu.au/college-statements-guidelines.html> .
- Torkzahrani, SH. (2008). Commentary: Childbirth Education in Iran, *Journal of Perinatal Education*, 17(3), 51-54.
- World Health Organization, (2014). Maternal Health Department, Available from URL:[http://www.unicef.org/health/index\\_maternalhealth.html](http://www.unicef.org/health/index_maternalhealth.html).
- Zareie A. (2005). Development of home care services, *Hospital Journal*, 5(1), 28-30.